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THE SEMIOTICS OF GESTURES IN COGNITIVE LINGUISTICS: CONTRIBUTION AND CHALLENGES*

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The present study addresses some of the fundamental issues and challenges of the semiotics of gestures in cognitive linguistics. Showing that cognitive linguists have contributed to the study of gesture forms and functions in various areas of research, the authors indicate that the questions of whether gestures are signs and whether they make a semiotic system still cause much debate.

In line with the previous studies, especially with "Kendon's continuum", the authors show that gestures differ in terms of conventionality, but other semiotic parameters of gestures should be taken into account as well. Relying on a broad understanding of semiosis, the authors argue that gestures should be considered as proper signs and analyzed in terms of a multi-vector model.

Unlike language signs, gestures are characterized by highly variable semiotic profiles that are shaped in multimodal usage events, and they form a fluid system with unique qualities.

Key words: *gesture, Kendon's continuum, usage event, semiotic profile of a gesture, semiotic system.*

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1. Introduction

The fact that language is almost always used with other semiotic resources seems to be more problematic for modern linguistics than is usually acknowledged.

On the one hand, the overarching multimodal trend in research that we observe today has important implications for linguistics: there is growing awareness that it is impossible to understand the laws of verbal communication and cognition without considering the laws of other semiotic systems that language co-occurs with (cf. [Eco 1987: 112]).

On the other hand, when linguists study multimodal combinations, such as written or spoken discourse with graphic components (ads, movies, posters, graphic novels, websites, etc.), spoken discourse with prosodic features, or speech with gestures, it is, naturally, the verbal component that is regarded as having the highest communicative load. As a result, language most often receives a more fine-grained semiotic description, if compared to other semiotic resources. This is largely due to Saussure and to post-Saussurean semioticians who established the linguocentric approach to semiosis and made extensive use of methods elaborated by linguists, especially structuralists. The "language bias" leads to the situation in which semiotic principles traditionally applied to verbal language are directly transferred to other modes, including gestures. This tendency is observed in cognitive linguistics (CL), where scholars have been more concerned with the universal processes of cognition that govern language. They often treat gestures as a testing ground for these processes and are less focused on analyzing the semiotic differences between various modes of communication that participate in the construal of the world.

In the meantime, for multimodal CL it is crucial to understand how semiotic modes (and systems) work together to successfully produce multimodal meanings, bearing in mind that these modes are organized differently. Probing into the symbiosis of modes that constantly co-occur in ordinary communication from the semiotic point of view might be an important step in breaking the much-discussed vicious circle. As some scholars observe, CL "starts with an analysis of language to infer something about the mind and body which in turn motivates different aspects of linguistic structure and behavior" [Gibbs and Colston 1995: 354; see also [Cienki 1998]). Apart from gaining extra access to how the communicative

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mind and communicative body connect, a more consistent semiotic analysis of co-speech gestures could show how, in natural communicative environments, the conventionality and more rigid standards of verbal systems (languages) are offset by less fixed, more fluid and individualized bodily semiotic modes (gestures).

Recently we have witnessed spectacular progress in cognitive gesture studies. At the same time, semiotic aspects of co-speech bodily movements remain "hot spots", with many issues being disputed [Sonesson 2014], including whether gestures are signs, whether they form a semiotic system, how the two systems (or modes) play to their strengths constructing joint meanings despite the difference in their semiotic design.

In this paper we aim to suggest answers to some of these questions, focusing on manual gestures. Basing ourselves on the previous works that address the semiotics of gestures, we, first, sum up the contribution made by linguists (mainly cognitive) to the semiotic analysis of gestures. Second, we analyze some challenges facing semiotic research on co-speech gestures in CL, and, revising Kendon's continuum, offer a multi-vector model and demonstrate its application to gesture analysis. Third, we discuss what implications this model might have for answering some fundamental questions about the semiotics of gesture. To highlight the dynamic multimodal nature of speech-gesture semiotic acts we will use the term "usage event" [Langacker 1988]. A usage event is characterized by a set of verbal and non-verbal (gestural, in our case) behaviors that interlocutors find relevant for their communication and choose to focus on (see the related notion of a "dynamic scope of relevant behaviors" in [Cienki 2012: 154]).

2. Semiotics of gestures: main areas of contribution

Although body language, body eloquence, and gestures have been referred to since ancient rhetoric, the works that explicitly address semiotic aspects of manual patterns are not very numerous. The most influential are the studies by D. Morris, P. Ekman and E. Friesen, A. Kendon and D. McNeill, followed by those of G. Calbris, G. Kreidlin, C. Müller, I. Mittelberg, J. Zlatev, L. De Cuypere, G. Sonesson and others.

In CL semiotic analysis of gestures is quite often overshadowed by language-motivated topics that have recently turned multimodal: embodiment and image-schemas, metaphor and metonymy, construal and viewpoint. Nevertheless, as most important aspects of gesture use cannot be analyzed without taking into consideration its semiotic nature, we find semiotic ideas in all seminal works on gesture use. In sections 2.1 – 2.4 we present a brief overview of the main areas of contribution to the study of gesture kinetics from the point of view of semiotics: semiotic typologies of gestures, mimesis and iconicity in gestures, the referential capacity of gesture as seen through metaphor and metonymy, cultural specifics of gesture use, units and categories for gesture analyses. We leave out such important domain of research as gesture use in speakers' native versus non-native languages, although it helps to investigate whether a change of semiotic environments can influence the gestural behavior of L1 and L2 speakers [Gullberg 1998; Cienki, Iriskhanova 2018].

2.1 Gesture kinesics as a semiotic discipline. Typologies of gestures

The modern cognitive turn in gesture studies can be viewed as a new stage in the transformation of gesture research into a separate discipline of non-verbal semiotics [Birdwhistell 1970]. In Russian linguistics the formation of this discipline is primarily associated with G. Kreidlin, who defines it as "a study of gestures and gesture movements, gesture processes and gesture systems" [Крейдлин 2002: 22]. Gestural kinesics together with paralinguistics, oculesics, haptics, proxemics, and some other disciplines comprise the semiotics of non-verbal communication [ibid.].

The acknowledgement of gesture studies as a semiotic discipline encourages scholars to find answers to numerous questions about the role of gestures in semiosis. Since gestures make a heterogeneous category, one of the important steps is to differentiate between subclasses of gestures.

Hence, forming typologies of gestures is one of the earliest topics relevant for the study of bodily semiotics. Most classifications of gestures offered by Efron, Eckman and Friesen, Kendon, McNeill and others are inspired by the semiotic studies of the first half of the 20th century and reflect the semiotic variety of manual movements. To give an earlier example, Eckman and Friesen (1969) describe several types of non-verbal behavior: emblems ("okay gestures"), illustrators (batons, ideographs, points, kinetographs, pictographs, spatial movements), affect displays (facial expressions), regulators, and adaptors. D. McNeill [McNeill 1992] divides ad hoc gestures (gesticulations, in Kendon's terms [Kendon 2004]) into four categories: iconic, metaphoric, deictic gestures, and beats. It is evident from these two examples that classifications of gestures are primarily based on Peirce's triadic model of semiosis with si-

milarity, contiguity, and conventionality as the basic relations between the sign form and the object [Mittelberg 2014]. Illustrators and metaphoric gestures are usually regarded as iconic gestures based on similarity; most points, or deictics, are often seen as indexical gestures that involve contiguity; emblems are viewed as the most conventionalized signs, or symbols.

Such gestures as batons (rhythmic gestures, or beats), affect displays, and adaptors (gestures of touching oneself or other people and objects) seem to be problematic, since they do not easily fit into Peirce's triadic model of conventional semiotic relations. That is why not all body movements are usually considered as signs: for instance, instrumental hand movements like taking a sheet of paper from the desk, are not usually considered as gestures by researchers (e.g. [Крейдлин 2002]). There is common assumption that gestures make a category with more conventionalized gestures as its center and less fixed, more individual gestures as its periphery, which, in fact, turns emblems into prototypical gestural signs.

2.2 Embodiment in gestures: mimesis and iconicity

One of the important areas in the study of any semiotic system (mode) is its evolution and interrelation with other semiotic systems (modes) in phylogenesis and ontogenesis. In CL, this is investigated from the point of view of *embodiment*, which brings new issues to gesture analysis.

The first issue has evolutionary implications and is based on Aristotle's concept of *mimesis*. Donald and Zlatev expanded it into *bodily mimesis* and *mimetic schemas* to highlight the importance of shared attention, imitation, and gesturing in language evolution and language acquisition [Donald 2001; Zlatev et al. 2008]. In a way it contributes to the hypothesis that initially humans "spoke" with gestures, which boosted the intersubjective skills necessary for verbal communication.

Mimesis, however, is regarded not only as an instrument of interlocutors' communicative alignment achieved through body mimicry, but as a means of gestures "miming" the semantics of the words they co-occur with. C. Müller, for instance, argues that mimesis should be viewed synchronically, because in everyday communication it motivates the "(embodied) semantics" of representational gestures [Müller 2016: 214]. Representational gestures usually correlate with the semantics of linguistic expressions and enact bodily actions and movements (e.g. gestures imitating writing) or represent entities, "turning into" them (a fist standing for a round object) or showing interaction with them (a gesture of holding a round object) [ibid.: 222]. So, gestures reintroduce basic mimetic schemas like JUMP, HIT, TAKE OUT, RUN, etc. through similarity between the qualities of gestures and the qualities of objects [Zlatev 2005; Cienki 2013b].

Thus, the notions of embodiment and mimesis encourage researchers to zoom in on the second issue relevant to semiotics of gestures, i.e. *iconicity*. It is most commonly viewed as the ability of gestures to refer to certain features of objects and events, showing isomorphism between a gestural form and the corresponding entity ([Kita 2000]). As it is noted by Mittelberg, the shape of an iconic gesture is conditioned by the quality of the entity it refers to, but the interpretation of an iconic gesture is governed by the linguistic expression it co-occurs with. For example, a gesture of two open hands with the palms held vertically facing each other can refer to the size of an object, or stretches of discourse, or even grammar [Mittelberg 2008: 126-127]. Therefore, iconicity is viewed as a basic mode of reference to entities (concrete or abstract) via gestures.

2.3 Referentiality and construal in gestures. Metonymy and metaphor

Referentiality, as it has long been assumed by philosophers and semioticians, is an indispensable quality of a sign. As a side note, we should mention that from the cognitive point of view, reference is not just an act of relating a sign to a certain referent, but it is closely intertwined with the cognitive process of construal [Sinha 1999] (cf. the notion of interpretant in Peirce's and Morris's works).

Bodily reference is achieved through referential gestures that are divided into representational and pointing gestures [Müller 1998; Cienki 2013a]. The division, as we indicated before, corresponds to the traditional Peircean division into iconic and indexical signs. Thus, indexical (or deictic) gestures point at objects in the vicinity, covering (both physically and conceptually) only part of those objects, because they orient the listener as to its location or identity. Representational gestures follow various modes: drawing (tracing the outline of a triangle), molding or holding (positioning one's hands as if holding a vase), acting (imitating the acts of driving a car), and representing or embodying (holding up one's palm in front of oneself as a mirror) [Müller 1998].

When representational gestures are applied to abstract ideas, this can give rise to multimodal metaphor. For example, a speaker accompanies the utterance *There are some similarities between functions*

and moves (referring to analysing discourse) with the following gesture: his first finger and forefinger form a ring, as if holding an object between the fingertips; at the same time the hand moves back and forth along an arched trajectory, in this way showing the connection between abstract entities (i.e. functions and moves in discourse analysis) [Mittelberg 2008].

2.4 Constitutive elements and parameters of gestures

The issue of constitutive elements and parameters of gestures at first glance seems to be more about notation techniques than about theoretical questions concerning the semiotics of gestures [Bressem, Ladewig 2011; Bressem, Müller 2014; Федорова, Кибрик 2018]. However, this empirical aspect has a much broader semiotic significance, since it implies that gestures are similar to linguistic signs and function as systems, as they can be segmented from the flow of communication and can be analyzed in terms of opposing qualities (like phonemes). Indeed, as summarized by McNeill (building on [Kendon 1980]), a gesture (a gesture phrase, in their terms) is a movement produced between two resting positions that includes such phases as preparation, pre-stroke hold, stroke, post-stroke hold, and retraction [Mc Neill 1992]. The stroke, as the climax of the gesture phrase, is compared to the most prominent syllable in a word. Although gestures quite often form chains with blurred boundaries, McNeill's model provides a reliable instrument for visual analysis of manual movements as discrete units. However, as D. Boutet et al. show in [Cienki, Iriskhanova 2018], the concept of gesture boundaries needs fine-tuning, as visual methods should be complemented by kinesiological analyses.

Another important contribution into the analysis of gestures is the notation system introduced by J. Bressem to describe the forms of gestures irrespective of their meaning and function [Bressem 2013]. The system originates from Stokoe's analysis of bodily articulation in sign languages [Stokoe 1978], which suggests that, at least from the point of view of analyzing formal features, co-speech gestures do not differ radically from more conventionalized sign systems.

3. Some challenges of semiotic analysis of gestures in CL

The overview of literature on gestures indicates that CL has substantially contributed to the semiotic study of gestures. Cognitive researchers offer effective methods of bottom-up analysis to show that co-occurrence of verbal and gestural components is triggered by various cognitive processes and mechanisms, such as metaphor and metonymy, viewpoint, focus shifts, blending, etc. However, to investigate the semiotic nuances of the interrelation between language expressions and gestures in varied contexts certain issues need further discussion and clarification, which brings us back to the fundamentals of modern semiotics.

In this paper we focus on some of the challenges, which we present as questions in the titles for sections 3.1 and 3.3 and suggest answers to them.

To illustrate some of the points we analyze examples from video data of three contexts of Russian informal spoken discourse obtained during empirical studies at the PoliMod lab of the Centre for Socio-Cognitive Studies of Discourse at MSLU in 2014 – 2018: 1) narratives about the events that the speakers witnessed (18 participants); 2) descriptions of paintings (20 participants); 3) interviews about the impressions of music (8 participants). The monologues were produced mostly by students of MSLU, annotated and analyzed in ELAN for different linguistic and gestural categories.

3.1 Signs or not signs?

As we showed in sections 2.1 – 2.5, the typologies of gestures based on the Peircean triadic model of semiosis, the gestures' role in mimesis and, hypothetically, in the evolution of verbal language, the referential qualities of gestures, their ability to participate together with linguistic units in figurative (metaphoric and metonymic) construal of meaning – all this, taken together, speaks in favor of gestures as entities very similar to linguistic signs.

The universally accepted definition of gesture as an action that counts as "an attempt to give information of some sort" [Kendon 2004: 7] points to the communicative nature of this bodily movement, which, in its turn, points to an act of semiosis and, consequently, to the status of gestures as signs (see also in [Крейдлин 2002; Гришина 2017]. Many scholars underline that gestures, like linguistic signs, are discrete; they correspond semantically to words and sentences and can fulfill the same pragmatic functions as speech acts. Some researchers argue that gestures have phonology, morphology and syntax and can form a lexicon (e.g. [Крейдлин 2002]).

At the same time, according to McNeill, Kendon, Kreidlin and others, there are fundamental differences between co-speech gestures and verbal signs. For instance, McNeill indicates that, unlike linguistic units that are segmentational and combina-

torial, gestures are global and synthetic [McNeill 1992: 36-72)]. Kreidlin argues that gestures "are mostly symbolic" [Крейдлин 2002: 48], but they are far more variable and unstable, less conventionalized. Besides, scholars often underline that not all gestures fit into the triadic model, which is due to their idiosyncratic nature, frequent opaqueness of meaning and intention, and multifunctionality.

Even the well-established division of referential gestures into deictic and representational presents a challenge. As it is shown in [Müller 1998; Mittelberg 2008; Cienki 2013a], from the point of view of metonymic and metaphoric reference, gestures form a continuum. It is observed that all gestures that refer to some entities, including the representational ones, are to some extent based on metonymy since they usually constitute an act that embodies an association with the referent which is only part of this object [Cienki 2013a: 350-351]. Hence, we find metaphtonymy in both pointing and representational gestures.

To illustrate this observation we chose an example from the interviews with people sharing their impressions of music. The speaker talks about the feeling of anxiety: *У меня тревога была какая-то необъятная. Ну не то что бы необъятная. Просто непонятно, [...],* ***с какой стороны эта тревога была*** (I felt an immense anxiety. Well, not really immense. Just that it wasn't clear […] **where that anxiety was coming from**). The gesture she uses with the phrase in bold consists of two hands with the index fingers pointing simultaneously in various directions around the speaker (Fig. 1):

Fig. 1. Metaphtonymy in pointing gestures: […] *с какой стороны эта тревога была*

The speaker acts as if she were trying to locate the source of her anxiety. The gesture can be seen as referring to her feeling through both spatial and causal contiguity, i.e. metonymically. At the same time it construes the situation metaphorically via the conceptual metaphor FEELING IS SUBSTANCE IN A CONTAINER and the subordinate metaphoric mapping THE CAUSE OF A FEELING IS OUTSIDE THE CONTAINER. Thus, the gesture combines metaphorical referential function with metonymy.

The accumulated evidence of multifunctionality of gestures indicates that there are no clear-cut distinctions between semiotic functions of gestures: between iconicity, idexicality, and symbolism, and between image, diagram, and metaphor within iconicity.

Another point worth mentioning is that if we assume that metaphoric and metonymic gestures are signs, i.e. similarity and contiguity between the signifier and the signified are entrenched, then we should assume that these two functions are presupposed. Nevertheless, there are a lot of cases (including the one cited above) proving that iconic and metonymic relations are produced, rather than reproduced in a context.

3.2 Kendon's continuum revisited

Generally, researchers agree on the semiotic nature of certain gestures, however, a lot of questions remain. Are gestures discrete, compositional and linear, or are they global and synthetic? Are they mostly symbolic, or is it only emblems that are truly symbolic? Do they have their own semiotic features, or are these features determined by the linguistic units they co-occur with, which makes them a subservient semiotic mode?

An elegant way of dealing with the semiotic fuzziness and heterogeneity of gestures as a category was offered by Kendon, and reformulated by McNeill, who demonstrated that gestures form a continuum in terms of communicative conventionality [Kendon 1988; McNeill 1992]. Emblems that are the most symbolic, or sign-like, due to the stability of the form-meaning relation and independence from context are placed at one end of the continuum, while idiosyncratic non-conventionalized gestures are at the other end.

The advantage of Kendon's continuum is that it shows that gestures as a category should not be analyzed in dichotomies, and that the semiotic status of gestures is a matter of degree. However, it takes into consideration one criterion – communicative conventionality, i.e. entrenchment of language-gesture usage events. In fact, it follows the tendency prevalent in linguistics to compare body movements to words and other language units in terms of conventionality. Most often semiotic or "non-semiotic" features of gestures are set against a linguistic sign that

plays a role of a model sign with conventionality and arbitrariness given center stage.

On the one hand, the language-oriented approach seems to be well-grounded, as gestures are often co-produced with language units in a single usage event. On the other hand, it is based on a narrow understanding of signs as units based on conventions of interpretation by interlocutors. It is rooted in a Saussurean linguo-centered approach and downplays the division of signs into natural and conventional (see the works by Augustine of Hippo and Peirce about this division). Nowadays, the concepts of sign and semiosis receive a much broader understanding under the influence of new branches of semiotics, especially biosemiotics, that rekindles some of Peirce's views in applying these concepts to living nature – from the microlevels of cells to the macro-levels of animal and human organisms [Uexküll 1928; Sebeok, Umiker-Sebeok 1992]. What is remarkable about this "natural science" approach is that it does not only reintroduce the broad understanding of sign, but expands the notion of semiosis as well. It is shown that semiosis is not only about interpretation, or communicative conventions; it is also about creating objects (manufacturing semiosis), and, importantly, about organizing objects into functioning systems, i.e. establishing signalling associations between objects (signalling semiosis) [Barbieri 2008]. Although this model of different kinds of semiosis is applied mainly to biological objects, it can be referred to gestures, since gestures as spontaneous bodily actions are initially natural signs (symptoms and signals), grounded in physiology, neurology, psychology along with social conventions and contextual constraints. Most of them are based on mimetic schemas [Zlatev 2005] and/or image schemas [Cienki 2013b] and, unlike words, establish short-term physical (physiological), rather than long-term mental, association with the signified (with the exception of emblems).

Consequently, from this broad perspective, co-speech gestures that are not directly involved in acts of interpretation semiosis and are not immediately characterized by communicative convention can still be treated as signs. So, we argue that the semiotic continuum of gestures is not so much about being more or less "sign-like" (in comparison to linguistic signs), as it is about gestures being *signs in a variety of ways*.

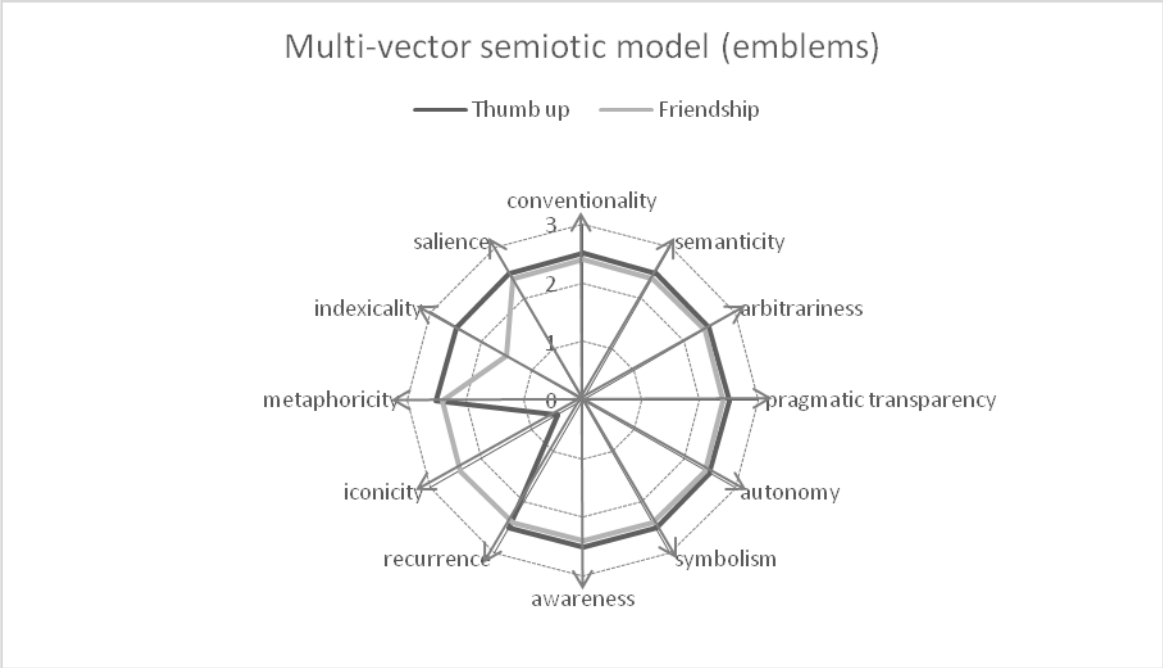
With a view to this broader understanding of sign and semiosis, we suggest expanding on Kendon's continuum. While its development into different mono-dimensional continua [McNeill 2005] offered certain novel insights, the proposal below involves turning it from a mono-dimensional to a multi-dimensional, or rather a multi-vector, model that is based on a number of parameters. The list of the semiotic features sums up the previous studies of gestures and is not definitive. They are as follows: *conventionality, semanticity, arbitrariness, pragmatic transparency, autonomy, social and cultural import (symbolism), awareness, recurrence, iconicity, metaphoricity, indexicality, salience*.

By conventionality we mean entrenchment of form-function and form-meaning relations in a gesture; semanticity is whether a gesture transmits a meaningful message; arbitrariness is the absence of natural form-meaning association, i.e. the one based on similarity or contiguity; pragmatic transparency is the explicitness of pragmatic intentions for the interlocutors; autonomy is whether a gesture can be used and interpreted without the verbal expression it co-occurred with; social and cultural import is whether a gesture is directly associated with socially relevant practices (rituals); awareness is the signalling of meta-communicative awareness [Cienki, in press] of producing a gesture; recurrence is about repetition of some basic formal features in a gesture to fulfill a certain function (e.g. brushing-away movement to express an "I-don't-care" attitude) [Ladewig 2014]; iconicity is whether a gesture represents (in Müller's terms) concrete (observable) characteristics of objects and actions; metaphoricity is the capacity to iconically represent abstract entities; indexicality is whether a gesture points at some entity "in the vicinity" or within a construed frame of reference; salience is whether a gesture is in the focal position in a multimodal usage event (for the characteristics of focal status of gestures see [Müller, Tag 2010]).

Schematically the multi-vector model for gestures is presented in the following radar chart (Diagram 1), using examples discussed below.

The grid pattern of the diagram structures the semiotic model around twelve vectors that do not constitute oppositions but radiate from the center. It conveys the general idea that co-speech gestures have a potential to "move" along each of these vectors outwards, with the center constituting the minimal value. The vectors are divided, albeit provisionally, into three areas – low (0 – 1), medium (1 – 2), and high (2 – 3), to reflect the approximate degree of manifestation of a semiotic feature in a gesture. The arbitrariness and fuzziness of the boundaries is depicted with dotted lines. Since there are no quantitative parameters in assessing the exact position of a gesture on a vector, during the analysis we mostly place it in the middle of a segment of the low, medium, or high-level zone.

Diagram 1

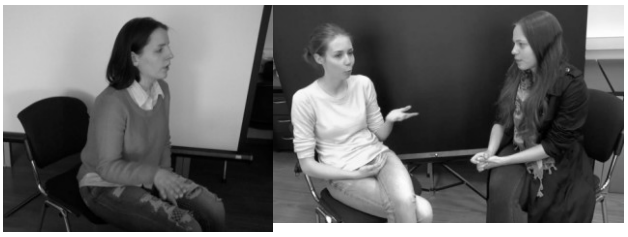


Importantly, the set of the semiotic parameters is variable both on the generic and the individual levels of gesture use. On the generic level of a subgroup of gestures the diagram reflects only some of the common semiotic features within this subgroup. For instance, in emblems *the generic semiotic profile* shifts to the high-level zone for the vectors of salience, conventionality, semanticity, arbitrariness, pragmatic transparency, autonomy, symbolism, awareness, and recurrence. The degree of indexicality, metaphoricity, or iconicity will depend on the gesture. For example, the "victory" sign mimes the Latin letter V, which points to a high degree of iconicity but a low degree of metaphoricity. It is in contrast with the gesture of appreciation (thumb up) or friendship (both hands of a person grasping each other as if in a handshake) that are based on the metaphors of UP IS GOOD and RELATIONS ARE PHYSICAL ACTIONS. Both these gestures would rank high in metaphoricity, with the thumb-up gesture being more indexical because of the direct pointing, and the friendship gesture – more iconic, as it imitates a physical act of shaking hands. We place the latter in the medium zone for indexicality, because it metonymically indicates an ostensive manifestation of friendship – a handshake [Cienki 2013a].

When applied to a concrete gesture, the diagram displays *the semiotic profile* of this gesture in a particular usage event. To show how the diagram works on the level of individual gestures we consider two examples of co-speech gestures from the datasets mentioned earlier:

	Datasets (time code)	**Linguistic expression**	**Gesture**
(1)	Descriptions of paintings (Video 1, 00:23)	*Оно [дерево]* ***упало*** (It [the tree] **fell down**)	Right-hand, flat palm down
(2)	Narratives about events (Video 5, 01:55)	***На самом деле****, у меня место рядом с твоим* (**Actually**, my place is [situated] near yours)	Left-hand, flat palm up, directed towards the listener

In example (1), which is an episode from the description of a landscape, the gesture that accompanies the verb in bold (*упало*) belongs to the functional group of representational gestures (the palm depicts the fallen tree). In utterance (2) the speaker describes her favorite place. She produces a discourse structuring gesture [Cienki 2013a] that indicates the introduction of a new topic. The flat open-handed palm refers to the new subject of talk metaphorically: the speaker holds up the palm, as if offering an object to the interlocutor [Müller 2004] (Fig. 3):

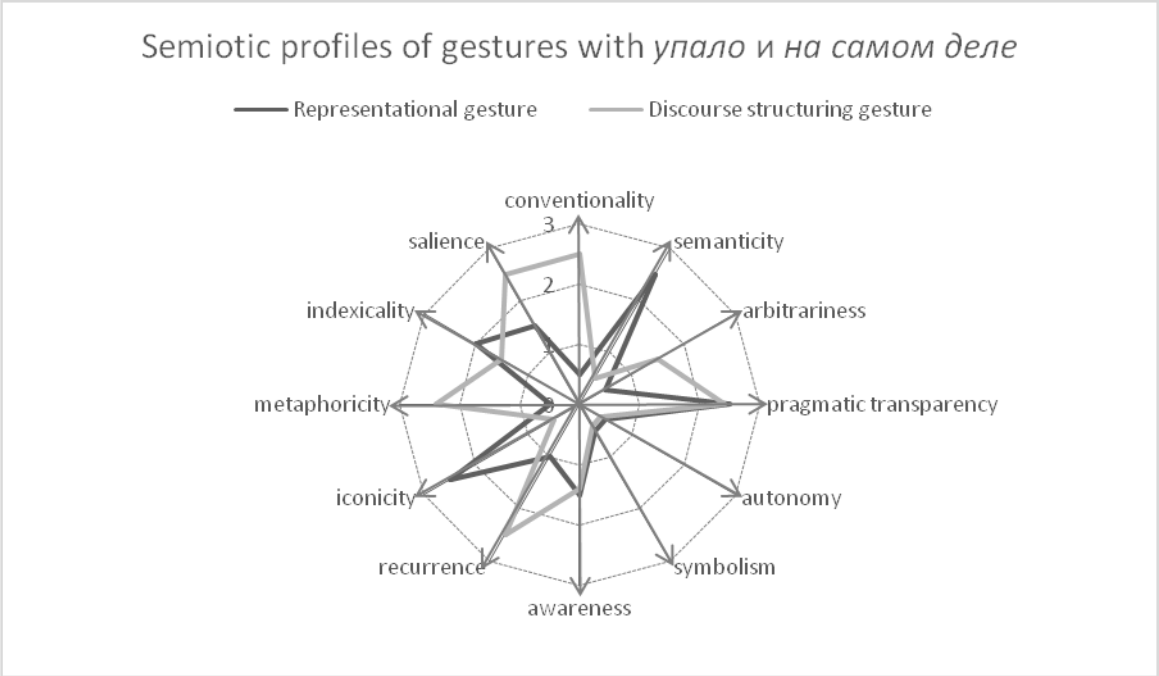


(а) Оно [дерево] упало *(б) На самом деле*

Fig. 3. Gestures used with *Оно [дерево] упало; На самом деле*

The semiotic profiles of the two gestures are presented in Diagram 2:

Diagram 2



As it is shown in Diagram 2, due to its obvious iconic nature the representational gesture (Fig. 3a) is characterized by a high degree of semanticity and pragmatic transparency (pragmatic function is to inform the interlocutor about the object in the painting). We placed conventionality, arbitrariness, autonomy, and symbolism at the low level for a number of reasons. Arbitrariness, metaphoricity, and symbolism are reduced by the direct (ostensive) iconicity of the gesture, while low conventionality is the result of the less typical use of a relatively static gesture (holding a flat palm) with a dynamic verb in perfective (*упало)*. The latter can be accounted for by the static construal of events, which is in accord with the static nature of the landscape in the painting. The low level of autonomy is explained by the representational function: the production and interpretation of the gesture is dependent on both the linguistic expression and the painting. Such semiotic features as awareness, recurrence, indexicality, and salience are placed in the medium zone. We put indexicality higher, i.e. between the medium and the high-level zones: although there is no explicit pointing at the object, the lower position of the hand refers to the location of the tree in the bottom of the painting as the main frame of reference of the usage event. The medium salience of the gesture is also connected to the lower positioning of the hand that is static, "on hold". Recurrence is at the border between low and medium: on the one hand, such gestures are used across various contexts; on the other hand, as we noted earlier, this case is less typical because of the difference in the static vs. dynamic construal of the event *[дерево] упало* via the gestural and linguistic modes.

The discourse structuring gesture in (2), on the contrary, is highly metaphoric, salient (we observe a long-range movement in the focal zone of the speakers), and transparent in terms of pragmatic function (introduction of a new topic) (Fig. 3b). The latter is confirmed by the co-occurrence of the gesture with the introductory discourse marker *на самом деле.* At the same time, the gesture is low in semanticity, since it does not reflect the semantics of the linguistic expression and does not refer to any specified class of objects. It is context-dependent (hence low autonomy) and it is not characterized by explicit social (cultural) symbolism, because there is no obvious link between the gesture and a cultural model. We can assume an implicit connection with a certain communicative ritual of introducing new topics in a

dialogue, given the known status of the palm-up open-hand as a recurrent gesture serving this discourse function in many European cultures [Müller 2004]; hence the high position of conventionality of form-function relations and recurrence in the chart. The production of the gesture in a low space without accompanying eye gaze are cues of medium metacommunicative awareness. The semiotic features of arbitrariness and indexicality are also located in the medium zone, as the former is limited by metaphoricity, and the latter is caused by the fact that the gesture is directed towards the listener and thus can be classified as a non-prototypical pointing gesture. So, we can conclude that the semiotic features are interrelated and can support or attenuate each other.

It should be highlighted that the "semiotic radar" presented in Diagrams 1 and 2 should be treated as a custom-built, rather than a ready-made device. Further elaboration might be needed to include more precise criteria for placing a gesture in "low", "medium" or "high" zones for each vector, to take into consideration complex gestures, and, if needed for a concrete study, to incorporate basic formal parameters of gestures.

Despite these limitations the suggested model of the semiotic variables has important implications for fundamental questions of gestures as phenomena, such as whether gestures form a system and how they are organized as a category.

3.3 Further discussion: Do gestures form a semiotic system?

If we accept that all co-speech gestures play a role in communicative usage events and should be regarded as signs, albeit varied in nature and functions, the next step would be to assume that they constitute a semiotic system. From the linguo-centric point of view, this is not the case, as there is a substantial number of gestures that are not conventionalized and are not regularly related to either a particular group of referents or to other gestures. And although researchers argue that gestures in speech can be divided into segments (phases and phrases) and can form utterances and even textual strata similar to sign languages, these arguments are always followed by concessions and constraints. Indeed, by the standards of spoken and sign languages, or any other well-formed semiotic system, co-speech gestures could hardly be qualified as a system. So, linguists are faced with a dilemma: either to accept that co-speech gestures are not signs, or to accept that they are signs (or some of them are signs) – without a sign system.

With a view to the multi-vector model which shows that gestures display variable sets of semiotic qualities on the generic and individual levels, one of the possible solutions to this dilemma would be to treat gestures as signs and to view them as a system that has unique qualities.

First, this system could be described as *"fluid"*, i.e. it is loose at the macro-level and is capable of self-organizing at the micro-levels of concrete contexts and interlocutor's discourse. Second, the highly individualized nature of manual movements can make them *resistant to form-meaning entrenchment* even in multiple instances of usage events. Third, gestures form subcategories with certain similarities in their generic semiotic profiles, but the boundaries between them are fuzzy and movable. Since the semiotic profiles of subcategories (and individual gestures) are also variable, we assume that the governing principle of the semiotic system of gestures would be *family resemblance*.

Forth, the analysis of the semiotic profiles of gestures showed that the degree of the manifestation of certain semiotic parameters (the level of semanticity, metaphoricity, pragmatic transparency, etc.) can be determined only with a view to the linguistic context. It suggests that gestures *constitute a partially dependent semiotic system* [Kibrik, Molchanova 2013] that, to use a biological metaphor, co-exists with language in a mutually beneficial symbiosis. For example, when used with speech, gestures are beneficial in foregrounding [Müller, Tag 2010] and backgrounding information conveyed by linguistic expressions. They can put into focus some aspects of the situation profiled by a language unit, they can sustain attention (holding gestures), direct (pointing gestures) and control attention (alternating hand movements) regarding certain aspects of information conveyed in speech [Ирисханова, Прокофьева 2017].

4. Conclusion

In the present study we addressed some of the issues relevant for the semiotic research of co-speech gestures from the cognitive perspective. We showed that over the recent decades, cognitive linguists have contributed remarkably to the study of gestural forms and functions, demonstrating their semiotic variety, their link to embodiment and mimesis, to conceptual metaphor and metonymy, and elaborating the formal

parameters for notation of manual movements in speech. Nevertheless, some fundamental issues are still being debated, and the questions of whether co-speech gestures are signs and whether they form a semiotic system still represent a challenge for cognitive studies.

Departing from the much-cited Kendon's continuum, we agree on the importance of the conventionality in assessing the "sign-like" status of a gesture. However, we argue that other semiotic features should be taken into consideration as well. Thus, we offered a new model of the continuum (presented as a radar chart) which is organized along twelve parameters: conventionality, semanticity, arbitrariness, pragmatic transparency, autonomy, social and cultural import, metaphoricity, indexicality, etc. We applied the model to build the semiotic profiles of gestures in particular usage events. Taking examples from three video corpora of spoken Russian discourse (mostly narrative and descriptive), we provided analysis of the semiotic features of co-speech gestures to show that, unlike words, they are characterized by highly variable sets of semiotic parameters that are shaped in concrete contexts.

The implications of the study are therefore both practical and fundamental. On the level of research procedures, the radar chart provides scholars with an instrument for investigating gestural semiotic profiles that reflect the manifestation of semiotic features in gesture use. On the more fundamental side, we hope the study clarifies issues of the semiotic status of gestures on the micro- and macro-levels of description. In general, we demonstrated that gestures should be regarded as signs with highly variable semiotic profiles. The variety and flexibility of their semiotic features indicate that gestures can be viewed as a semiotic system that differs from linguistic systems in being more fluid, more subject to individual differences and more resistant to entrenchment, as well as being more language-dependent than language-independent.

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СЕМИОТИКА ЖЕСТОВ В КОГНИТИВНОЙ ЛИНГВИСТИКЕ: ДОСТИЖЕНИЯ И АКТУАЛЬНЫЕ ВОПРОСЫ*

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Настоящее исследование посвящено рассмотрению некоторых фундаментальных вопросов и проблем семиотики жестов в когнитивной лингвистике. Показано, что несмотря на существенный вклад когнитологов в различные области семиотического исследования жестов, некоторые вопросы, в частности, являются ли жесты знаками и способны ли они образовывать знаковую систему, еще ждут своего решения. Опираясь на предыдущие исследования (особенно на идеи А. Кендона о жестовом континууме), авторы соглашаются с тем, что жесты различаются по степени конвенциональности, указывая, что следует принимать во внимание и другие семиотические параметры. На основе широкого понимания семиозиса выдвигается идея о том, что жесты целесообразно рассматривать как полноценные знаки, и предлагается анализ жестов с применением многовекторной модели. Анализ демонстрирует, что, в отличие от языковых знаков, жесты характеризуются повышенной вариативностью семиотического профиля, который складывается непосредственно в полимодальных актах коммуникации; жесты также образуют гибкую знаковую систему с уникальными свойствами.

Ключевые слова: *жест, континуум Кендона, коммуникативное событие, семиотический профиль жеста, знаковая система.*

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